UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
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BIN C15700
Seattle, WA 98115-0070

NMFS Tracking No.:
2002/01227

July 18, 2003

Mr. Daniel Mathis
U.S. Department of Transportation
Federal Highway Administration
711 Capitol Way S. Suite 501
Olympia, Washington 98501-1284

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Steven Fishery Conservation and Management Act Consultation for the Johnson Bridge Replacement Project, Walla Walla County, Washington (WRIA 32)

Dear Mr. Mathis:

In accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended, and the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996, the enclosed document transmits NOAA's National Marine Fisheries Service's (NOAA Fisheries) Biological Opinion (Opinion) and MSA consultation on construction activities necessary for replacement Johnson Bridge over the Touchet River in Walla Walla County, Washington. The Washington State Department of Transportation (WSDOT) determined that the proposed action was not likely to adversely affect (NLAA) threatened steelhead of the Middle Columbia River (MCR) Evolutionarily Significant Unit (ESU). NOAA Fisheries was unable to concur with this NLAA determination, and recommended formal consultation with the Federal Highway Administration (FHWA).

This Opinion reflects the results of a formal ESA consultation and contains an analysis of effects covering MCR steelhead in the Walla Walla River basin, Washington. The Opinion is based on information provided in the Biological Assessment and additional information transmitted via telephone conversations, and electronic mail. A complete administrative record of this consultation is on file at the Washington Habitat Branch Office.

NOAA Fisheries concludes that implementation of the proposed project is not likely to jeopardize the continued existence of MCR. In your review, please note that the incidental take statement, which includes Reasonable and Prudent Measures and Terms and Conditions, was designed to minimize take.

The MSA consultation concluded that the proposed project may adversely affect designated Essential Fish Habitat (EFH) for chinook (*O. tshawytscha*) salmon. Specific Reasonable and Prudent Measures of the ESA consultation, and Terms and Conditions identified therein, would address the negative effects resulting from the proposed FHWA actions. Therefore, NOAA Fisheries recommends that they be implemented as EFH conservation measures.

Thank you for your efforts to protect MCR steelhead and their riverine environment. If you have any questions, please contact Diane Driscoll of the Washington Habitat Branch, Ellensburg Field Office at (509) 962-8911 x227 or diane.driscoll@noaa.gov.

Sincerely,

for D. Robert Lohn

D. Robert Lohn
Regional Administrator

Enclosure

cc: Michael Kulbacki, FHWA
John Heinley, WSDOT
Roger Arms, WSDOT

Endangered Species Act – Section 7 Consultation
Biological Opinion
and
Magnuson–Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Johnson Bridge Replacement Project, Touchet River,
Walla Walla County, Washington

NMFS Tracking No.: 2002/01227

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service
Northwest Region

Issued by: for [signature] Date: July 18, 2003

D. Robert Lohn
Regional Administrator

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1.0 INTRODUCTION

This document transmits NOAA's National Marine Fisheries Service (NOAA Fisheries) biological opinion (Opinion) under the Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). It is based on our review of a proposed project to replace the Johnson Bridge in Walla Walla County, Washington. Johnson Bridge crosses the Touchet River, a tributary to the Walla Walla River, which is in turn a tributary to the Columbia River. The Touchet River is in the geographic range of the Middle Columbia River (MCR) evolutionarily significant unit (ESU) for threatened steelhead (*Oncorhynchus mykiss*) and is EFH for chinook (*O. tshawytscha*) salmon. An ESU is considered a distinct population segment appropriate for protection under the ESA.

1.1 Background Information and Consultation History

The Washington State Department of Transportation (WSDOT) presented a Biological Assessment to NOAA Fisheries on October 7, 2002 describing a project to replace the Johnson Bridge over the Touchet River in Walla Walla County, Washington. The WSDOT is the designated non-Federal representative of the Federal Highway Administration (FHWA), which is providing funding for the proposal. Because of the poor condition and narrow width of the existing bridge, Walla Walla County proposes to replace the existing multispan bridge with a new single-span bridge. The project requires temporarily diverting the Touchet River, removing the existing bridge, footings, piers and a steel crib wall along the north streambank, and reconstructing the streambanks. The WSDOT decided the project was not likely to affect MCR steelhead. After reviewing the BA, NOAA Fisheries determined the proposed project "may affect, is likely to adversely affect" MCR steelhead. On October 29, 2002, NOAA Fisheries informed the WSDOT and the FHWA that the project required formal consultation. Formal consultation was initiated on February 6, 2003, when NOAA Fisheries received a consultation request letter from the FHWA.

Information for this document came from the Biological Assessment (BA), telephone conversations, and electronic mail (e-mail) correspondence with Eric Zitterkopf with Walla Walla County Department of Public Works (WWCPW), and Benn Burke with Adolfson and Associates.

1.2 Description of the Proposed Action

The FHWA proposes to fund, in whole or in part, a bridge replacement project by the WWCPW. The WWCPW proposes to replace the Johnson Bridge, which is on the Touchet Road North overcrossing of the Touchet River. A 140-foot long by 32-foot wide concrete bridge will replace the existing 126-foot long by 22-foot wide bridge in the same location.

1.2.1 Worksite Isolation and Handling Fish

In-stream work will occur between July 15 and September 30. Data collected by Mendel *et al.* (2002) suggest that during the proposed in-water construction period, flows are likely to be less than 45 cubic feet per second (cfs) and water temperatures are typically greater than 70° Fahrenheit making the area unsuitable for salmonids. However, in-stream projects in the mainstem Walla Walla River (Whitman Bridge) and in Dry Creek (McInroes Bridge) encountered salmonids under similar conditions in August 2002. It is therefore likely that salmonids, including juvenile steelhead, will be in the action area during the proposed work window. If fish are present, they will be removed in order to avoid killing them. Washington Department of Fish and Wildlife (WDFW) biologists or other qualified personnel will be responsible for fish removal and salvage from the worksite. Additionally, FHWA will document fish salvage activities (see attached Appendix 1) and report results to NOAA Fisheries. The stream bypass will be approximately 120 feet long. The bypass pipe will be of sufficient size to fit expected flows and allow fish passage.

The FHWA will conduct worksite isolation and fish removal in a manner that minimizes handling and stress to fish in the area. To prevent fish from moving into the work area, block nets will be installed at up and downstream locations. Block net mesh size, length, type of material, and depth will vary based on site conditions. Generally, block net mesh size is the same as the seine material (approximately one-fourth inch stretched). The FHWA will install the upstream net first. Biologists will then stretch a second net across the wetted channel and walk downstream, "herding" fish out of the work area. This process will be repeated several times to remove as many fish as possible without handling. If fish are still thought to be in the worksite after several attempts at "herding," qualified personnel will electroshock to capture and remove fish. To reduce or avoid the possibility of harm from electrofishing, the project proponent will adhere to NOAA Fisheries electrofishing guidelines (NMFS 2000) and use a qualified biologist to ensure the safe capture, handling and release of fish. Any fish captured will be released immediately into nearby free flowing water. During fish removal activities, the block nets will remain in place and designated personnel will check at least once daily to make sure the nets are functioning properly. Monitoring for effectiveness and debris removal will be conducted as necessary. A designated individual will monitor and maintain the nets.

1.2.2 Construction of the Temporary Stream Bypass

After isolating the work area and removing fish, the FHWA, its funding recipient, or the recipient's Contractor, will redirect flow from the river through a series of culverts totaling 120 feet. The FHWA will size culverts to pass a minimum of 250% of the expected flow during the construction period. They will install gravel bag revetments and concrete ecology blocks (or a similar temporary diversion) at the upstream end of the bypass inlet to divert the entire flow of the river into the culvert. They will install a similar revetment at the downstream end of the bypass to prevent backwatering the work area. During this phase of work, the Contractor will also remove existing concrete pieces from the Touchet River channel. After the diversion is in place, the Contractor will fill the area between the upstream and downstream temporary

revetments with gravel and cobble to construct a work area and detour road. Placement of the temporary fill material will allow detoured traffic and machinery to move freely and safely over the dewatered area. By September 30, 2003 (after completing bank stabilization), FHWA will remove the bypass culvert, and diversion revetments from the stream channel.

1.2.3 Demolition of the Existing Bridge

Work crews will clean the bridge deck to remove all loose rock and earthen debris before deconstruction. Typically, the desirable method of bridge removal is to demolish and remove the existing bridge in large pieces. However, removing the existing bridge in large pieces is not practical as the bridge is cast-in-place concrete with no individual girders. Because the structure is brittle, with limited reinforcing steel, demolition will likely produce mostly small and medium sized pieces. The FHWA therefore expects that many pieces of the demolished bridge will fall into the dewatered work area of the river channel. Chain link fence covered with geotextile fabric will be placed over the culvert and fill to collect the debris; a track-type excavator or similar equipment will be used to remove the material. The work crews will completely remove the north abutment, the steel crib wall, and the south abutment and instream piers to at least four feet below grade. Existing abutments and the steel crib wall will be removed using mechanical means. No blasting is necessary or proposed.

Some of the concrete debris from the bridge demolition will be broken into small pieces (less than 6 inches in diameter) and used as fill material to build the embankments of the new roadway approaches. Construction methods allow debris to be used in this manner as long as the debris will have no less than two feet of cover. On-site use of construction debris will be allowed only upon the approval of the County Engineer. All other debris, including steel reinforcing bars and the steel crib wall on the north abutment, will be removed to an approved recycling or disposal area. Details concerning debris disposal will be included in the bridge demolition plan. The County Engineer and FHWA will approve this plan before construction.

1.2.4 Construction of the New Bridge

Work on the replacement bridge will begin with building the bridge substructure. The new single-span bridge will require abutments on the north and south banks. Construction of the substructure will include:

1. Recontouring stream banks (around the bridge) to a two-foot horizontal to one-foot vertical slope;
2. Poured in place auger-cast concrete piles and spread footings (no pile driving needed).
3. Pouring concrete abutment walls to complete the bridge substructure.

The new bridge abutments will be at least 15 feet back from the top of the riverbanks and consist of poured-in-place concrete. Since the stream flow will be within a culvert and the new bridge abutments will be outside the channel, no contact between the stream and uncured concrete,

grout, or cement will occur.

Once the replacement substructure is in place, decked girders will be raised onto the substructure with lifting equipment located on the banks above the ordinary high water mark (OHWM). The project will widen the road approaches from 20 feet to approximately 32 feet, to match the width of the new bridge. The approaches will be tapered to match the existing road at the limits of the roadway improvements. The widened approaches will create an increase of approximately 0.25 acre of new impervious surface. The last phases of construction will involve installing beam guardrails on the approach roadway, and concrete Jersey barriers on the bridge.

1.2.5 Construction of Stormwater Facilities

Currently, stormwater treatment for the existing roadway consists of overland flow into adjacent ditches for infiltration. Stormwater from the existing bridge flows directly into the Touchet River. Walla Walla County proposes to minimize effects of the existing and new impervious surface by building catch basins at each end of the new bridge. These catch basins will direct surface runoff to an open channel swale to promote infiltration and prevent direct access to the Touchet River. The roadside conveyance system for this project will provide 100% treatment of stormwater from the entire project area, both new and existing. This represents treatment of approximately 244% of the new impervious surface.

1.2.6. Instream Habitat Enhancement

The addition of two large woody debris (LWD) structures and four boulders will provide a relatively small amount of in-water habitat. The LWD structure will be similar to other projects constructed over the last few years, to ensure the material is the proper size, and anchored for maximum benefit and longevity. In addition to the LWD, placement of four large (4-5 ton) boulders into the channel will also create a small amount of in-stream habitat diversity.

1.2.7 Clearing, Grading, Bank Reconstruction and Revegetation

Clearing and grading of approximately 0.3 acre of land is necessary for construction of the new bridge abutments, the widened bridge approaches and the temporary detour. Most of the land to be cleared is either graveled road shoulders or disturbed agricultural land. The amount of riparian streambank that will be temporarily disturbed is approximately 300 linear feet.

Removing the bridge will modify existing banks, necessitating bank reconstruction. Bank reconstruction will include building two to one slopes with riprap under the bridge, and with geogrid fabric comprised of 100% coir twine (from coconut husks) placed over slopes no greater than four-to-one (found below the two to one slope area), then planting with native species to improve long-term stability. The FHWA will place topsoil in all heavy, loose, riprap areas. Topsoil will be worked into all voids so that no more than three inches of riprap is exposed. All riprap covered with topsoil will be hydroseeded without fertilizer. Live branch cuttings will be planted along the streambank will promote quick revegetation. The cuttings will consist of black

cottonwood, coyote or "streambank" willow, red osier dogwood or similar native plants. In addition to the live branch cuttings, FHWA will plant approximately 10 rooted tree/shrubs at the bridge abutments near the toe of the two-to-one slopes (found along the south streambank with the live branch cuttings roughly 15 feet from the north streambank). These plants will be cottonwood, golden willows, elderberry, or similar native species spaced 10 to 15 feet apart, with no trees planted directly under overhead power lines. The FHWA will hydroseed all disturbed ground surfaces and new fill slopes (including riprap slopes) with native grasses (various forms of wheatgrass, bluegrass) and apply mulch and fertilizer (no fertilizer within 50 feet of the streambank). The FHWA will regrade banks around the detour route to match existing banks, and plant willow slips in these areas.

1.2.8 Staging Areas, Temporary Construction Access and Detour Route

Site limitations require that the designated staging area be located on and immediately adjacent to the existing road at the south end of the bridge, within 50 feet of the top of the stream bank. Therefore, FHWA will install sediment and pollution control protection before any heavy equipment occupies the staging area.

Constructing the detour and work platforms will entail temporarily filling the dewatered section to construct a level work area and detour route. Temporary diversion revetments constructed upstream and downstream of the bridge will contain the fill. An existing field access road will be used as a temporary detour and access route during construction. The temporary work platform will occupy the entire length of diverted river and the entire width of the river channel under the bridge (approximately 0.2 acre). During periods when the culvert diversion is in place, traffic will also be detoured over the temporary fill. Any necessary elevated work platforms will be suspended from the new structure after the river diversion has been removed.

1.2.9 Timing of Project Activities

Construction is expected to take up to four months, from mid-July through mid-November. Work is prohibited below the OHWM before July 15 and after September 30. Some staging and pre-construction preparation outside the OHWM will occur before the July 15 start date. The creek will be returned to its natural channel by September 30, the earliest date that adult MCR steelhead might begin migrating through the action area. After the stream flow has been returned to its natural channel, remaining work will include completing the new roadway approaches, installation of new guardrails and Jersey barriers, and general site clean up.

1.3 Description of the Action Area

The action area is all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02 and 402.14(h)(2)).

Johnson Bridge is in the Lower Touchet watershed, roughly 11 miles upstream of the confluence with the Walla Walla River. The action area is the stream channel, which includes the water and

land (including submerged land), from roughly 250 feet upstream of the existing Johnson Bridge to approximately 200 feet downstream from Johnson Bridge. The action area also includes the adjacent riparian zone within the construction area and all areas affected by the project including staging areas, catch basins, and roadways.

2.0 ENDANGERED SPECIES ACT BIOLOGICAL OPINION

The purpose of consultation under the ESA is to insure that any action authorized, funded, or carried out by a Federal agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat designated as critical to such species. To "jeopardize the continued existence of the species" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02). Critical habitat is not currently designated for the species under consideration in this Opinion, therefore the analysis for destruction or adverse modification of critical habitat is not presented in this document.

2.1 Evaluating the Proposed Action

The standards for determining jeopardy as set forth in section 7(a)(2) of the ESA are defined by 50 CFR part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of (1) defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries considers estimated levels of injury and mortality attributed to: (1) collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must consider measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

2.1.1 Biological Requirements

The first step NOAA Fisheries uses when applying the ESA section 7(a)(2) to listed species, is to define the species' biological requirements. NOAA Fisheries also considers the current status of the listed species, considering population size, trends, distribution and genetic diversity. To assess the current status of the listed species within the action area, NOAA Fisheries starts with the determinations made in its original decision to list the species for protection under the ESA. Additionally, the assessment will consider any new information or data that is relevant to the

determination.

The relevant biological requirements for this consultation are those conditions necessary for MCR steelhead to survive and recover to naturally reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

NOAA Fisheries has related the biological requirements for listed salmonids to several habitat attributes, or pathways, in the Matrix of Pathways and Indicators (MPI) (NMFS 1996). These pathways (water quality, habitat access, habitat elements, channel condition and dynamics, flow/hydrology, and watershed conditions) indirectly measure the baseline biological health of listed salmon populations through the health of their habitat. Specifically, each pathway consists of a series of individual indicators (*e.g.*, indicators for water quality including temperature, sediment/turbidity, and chemical contamination/nutrients) measured or described directly (NMFS 1996). Based on the measurement or description, each indicator in the MPI can be classified within a category according to quality of its functional condition (the "properly functioning condition" (PFC) framework): (1) properly functioning; (2) at risk; or (3) not properly functioning. Properly functioning condition is "the sustained presence of natural habitat forming processes in a watershed that are necessary for the long-term survival of the species through the full range of environmental variation."

Biological requirements of MCR steelhead include adequate food, flowing water (quantity), high quality water (cool, free of pollutants, high dissolved oxygen concentrations, low total dissolved solids), clean spawning substrate, diversity of riparian and in-water habitat, and unimpeded migratory access to and from spawning and rearing areas (adapted from Spence *et al.* 1996). For the proposed action, the specific biological requirements to be affected in various degrees over the entire project are: (1) minor improvement in pool frequency and quality (habitat elements) with the creation of in-water habitat structures; (2) improvements in channel conditions and dynamics by removing the channel constricting abutments of the existing bridge; (3) improvements in local water quality by eliminating direct runoff from the bridge surface; and (4) improved riparian function by replanting additional native trees along the streambanks.

2.1.2 Environmental Baseline

The environmental baseline represents the current set of conditions to which the effects of the proposed action are then added. The term "environmental baseline" means "the past and present impacts of all Federal, state, and private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or informal section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation process" (50 CFR 402.02).

The proposed project location is in the Walla Walla River watershed in Walla Walla County, Washington. The Walla Walla River is a tributary to the Columbia River and drains an area of

approximately 1,758 square miles with the headwaters in the Blue Mountains and the Palouse Hills. The project area is along the Touchet River, approximately 15 miles upstream from the confluence with the Walla Walla River (at river mile 29.4). The Touchet River is approximately 35 miles long and drains an area of roughly 35 square miles (Hancock 2001).

The Touchet River subbasin is primarily agricultural land. Surface waters throughout most of the subbasin lack LWD, and have narrow strips of riparian vegetation. The subbasin exhibits low stream flows (exacerbated by surface water withdrawals), high water temperatures, heavily silted substrates, and many stream reaches altered by diking and channelization (Kuttel 2001). The Touchet River has experienced severe channel incision, with some unstable areas downcut 40 to 50 feet (Reckendorf 2001 *in* Kuttel 2001).

Agricultural lands comprise 58% of the watershed, while forestland and rangeland cover 25% and 17% respectively (U.S. Army Corps of Engineers 1997). Agricultural practices have seriously degraded salmonid habitat in many areas of the watershed. Practices such as farming to the edge of streams, removing riparian vegetation, filling off-channel areas, diking and channelization, allowing livestock full access to streams, conversion of native perennial vegetation to annual crops, and irrigation have all played roles in habitat degradation (Bureau of Reclamation 2001; U.S. Army Corps of Engineers 1997; Mendel *et al.* 2001; Saul *et al.* 2001).

The major limiting factor throughout the Walla Walla subbasin appears to be water diversions and withdrawals, which result in low stream flows and possible fish kills. The WDFW estimates that less than ten percent of surface water diversions in the Washington portion of the basin meet state or Federal juvenile fish screening criteria (Kuttel 2001). Bireley (2001) reported that over 75% of the diversions identified in the Cooperative Compliance Review Program (CCRP) are in streams used for salmonid spawning, rearing, and migration. The high incidence of non-compliant surface water diversions is a serious threat to steelhead. Furthermore, it is likely the diversions identified in the CCRP may represent only 50% to 60% of surface water diversions currently in use in the Washington portion of the basin.

Most of the stream bottom of the lower Touchet River consists of mud and embedded or buried gravel. Channel entrenchment, high sedimentation rates, lack of floodplain connectivity, poor habitat complexity and bank erosion all limit available refugia and off-channel habitat. Riparian vegetation, where it exists, is generally limited to a narrow band of small diameter locust, willow, black cottonwood, serviceberry, and reed canarygrass.

Extensive habitat blockages, water diversions, altered water flow and temperature regimes, and the resulting loss of spawning and rearing habitat for steelhead in the MCR ESU have combined to result in a continuing threat to its persistence. At least two extinctions of steelhead populations have occurred in this ESU (in the Crooked and Metolius Rivers), and the continuing declines in existing populations both with and without hatchery influence are a source of concern.

2.1.3 Factors Affecting Species Within the Action Area

Section 4(a)(1) of the ESA and NOAA Fisheries listing regulations (50 CFR 424) set forth procedures for listing species. The Secretary of Commerce must determine, through the regulatory process, if a species is endangered or threatened based upon any one or a combination of the following factors: (1) the present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors affecting its continued existence. When NOAA Fisheries conducted its status review of species, it found conditions affecting MCR steelhead, as described below.

Baseline conditions in the Walla Walla subbasin are degraded. The three most limiting factors are water quantity, water quality, and habitat conditions (Kuttel 2001). Both legal and illegal water withdrawals for irrigation have significantly reduced water quantity in the Walla Walla River and its tributaries. Within the action area, lack of off-channel habitat, few wetlands, and stream-flow regimes with high winter peaks and low summer flows (and associated high temperatures) limit habitat availability and productivity. Narrow, incised channels, flat gradients, and low flows have conspired to create poor conditions for fish including isolated pools and stagnant flows. Off-channel habitats are nearly nonexistent along the reach because of severe channel incision (Kuttel 2001).

Some sections in the Lower Walla Walla subbasin (including Touchet River) are identified as water quality limited under section 303(d) of the Clean Water Act, based on temperature and pollution. As of 1984, 252,000 tons of fine sediment per year moved from cropland to streams in the Touchet River subbasin. For comparison, forestlands delivered 354 tons per year (USDA SCS *et al.* 2001).

Agricultural land uses, urban and rural development, and roads have altered channel dynamics and hydrology in the basin (Kuttel 2001). The riverbanks in the action area are steep and unstable and, as described above, support only isolated, narrow strips of riparian vegetation. Degradation to streambanks and floodplain connectivity in the action area as a result of bank armoring, levees, channelization, and other flood control measures. Stream buffers are narrow and woody vegetation is mostly immature. Large woody debris abundance and recruitment potential is poor.

NOAA Fisheries uses the MPI (NMFS 1996) to analyze and describe the effects of these factors on listed salmon and steelhead. In terms of the MPI indicators the action area is "not properly functioning" or "at risk" relative to all habitat attributes.

2.1.4 Status of Species

Table 1 describes the listing status and biological information for threatened Middle Columbia River steelhead.

Species (Biological Reference)	Critical Habitat Designation	Listing Status Reference
Steelhead from Washington, Idaho, Oregon and California (Busby, et al. 1996).	No critical habitat designated at this time.	NOAA Fisheries listed the MCR steelhead ESU as Threatened under the ESA (March 25, 1999, 64 FR 14517).

Table 1. References to Federal Register Notices containing additional information concerning listing status, and biological information for listed and proposed species considered in this biological opinion.

Middle Columbia River steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). In Washington, the MCR steelhead ESU includes summer steelhead in tributaries to the Columbia River above the Wind River in Washington and the Hood River in Oregon upstream to include the Yakima River, Washington (Busby *et al.* 1996). Not included are steelhead of the Snake River Basin.

All steelhead in the Columbia River Basin upstream from the Dalles Dam are summer-run, inland steelhead (Busby *et al.* 1996). Summer steelhead return to freshwater between May and October after spending one or, more commonly, two years in oceanic waters (Busby *et al.* 1996, Wydowski and Whitney 1979). Returning steelhead in the Columbia River typically spend several months in freshwater before spawning (Wydowski and Whitney 1979). In Washington, most populations begin spawning in February or March (Busby *et al.* 1996). Depending on water temperature, steelhead eggs incubate for one and one-half to four months before hatching (August 9, 1996, 61 FR 41542). In wild populations, juveniles usually migrate to sea at age two, but hatchery conditions allow steelhead to smolt after only a single year (Wydowski and Whitney 1979).

In 1991, Nehlsen *et al.* identified six stocks of steelhead within the MCR ESU as at risk of extinction, or of special concern. The Walla Walla River stock is of special concern. Several factors have contributed to the decline of MCR steelhead including habitat degradation through grazing and water diversion, over harvest, predation, hydroelectric dams, hatchery introgression, drought and other natural or human induced factors (Busby *et al.* 1996). Estimates of historical, pre-1960s abundance for the MCR ESU are available for the Yakima River only. The estimated historical run size in the Yakima River 100,000 (Smoker 1956 *in* WDF and WDW 1993) with the recent five-year average (1996-2000) of 1,059 wild summer steelhead (Sampson *et al.* 2000). Assuming that other basins had comparable run sizes for their drainage areas, the total historical run size for this ESU might have been over 300,000. The current natural run size for the MCR ESU could be less than 15% of estimated historical levels. Dam counts of summer steelhead on the Walla Walla River at Nursery Bridge Dam declined 17% per year from 1993 to 1998, with a five-year geometric mean abundance of just over 300 fish (Greer 1998, cited in Busby *et al.* 1999).

Presently, steelhead are the only anadromous salmonids known to spawn in the Walla Walla

River subbasin (Kuttel 2001 and Mendel *et al.* 2002). Steelhead spawn and rear in the Walla Walla River including the North and South Forks and several of their tributaries, Mill Creek and several of its tributaries, Dry Creek, and the Touchet River including the North and South Forks, Wolf Fork, Robinson Fork, Spangler Creek, Lewis Creek, Jim Creek, Patit Creek, and Coppei Creek (Kuttel 2001). Steelhead begin entering the Walla Walla drainage as early as September or October but, if necessary, they will delay upstream migration until stream conditions become favorable (Bjornn and Reiser 1991). Peak adult migration occurs in early November but migration timing may vary from year to year depending on weather or flow conditions. Most of the spawning in the Walla Walla River subbasin occurs near the headwaters where riparian vegetation, water temperatures, and gravel are more suitable.

The Lower Touchet Subbasin includes the Touchet River and all tributaries downstream from the city of Dayton, Washington. This portion of the Touchet flows through a wide valley bottom walled in by gently rolling hills. Today, the large floodplain produces agricultural crops such as alfalfa, peas, and wheat. Approximately 730 stream-road crossings occur in the subbasin with 250 miles of road within 100 feet of streams and 470 miles of road within 300 feet of streams (McFarlane 2000 *in* Kuttle 2001). Habitat conditions in the Lower Touchet Subbasin are not as favorable to salmonids as those found in the Upper Touchet Subbasin. In 1977, Washington State prohibited further consumptive appropriations of surface water from June 1 through October 1 (Washington State 1977 *in* Kuttle 2001). Low flows caused by irrigation withdrawals from June 1 through October 1, and a lack of functioning riparian areas, create passage and thermal barriers to migrating salmonids and reduce rearing habitat substantially (Saul *et al.* 1999; Mendel *et al.* 1999; Mendel *et al.* 2000). Poor habitat conditions have reduced this subbasin primarily to a migration corridor from the mouth to Waitsburg, although some limited steelhead spawning (March through May) and rearing (November through May) takes place from just downstream of Waitsburg to Lewis and Clark Trail State Park (Kuttle 2001). Winter and spring high flows carry large fine sediment loads from sheet and rill erosion of agricultural fields (USDA Soil Conservation Service *et al.* 1984 *in* Kuttle 2001). Severe erosion also occurs during intense summer and fall rainstorms (Kuttel 2001). Salmonid bearing streams in this subbasin include the Touchet River, Patit Creek, Whiskey Creek, and Coppei Creek.

2.1.4.1 Population Trends and Risks

Both long- and short-term trends in abundance of naturally spawning steelhead are declining in the MCR ESU as a whole (Busby *et al* 1999). Especially severe declines occur on the Walla Walla River at Nursery Bridge Dam, where the numbers of summer steelhead have been decreasing by almost 17% per year from 1993-1998 (Greer 1998, cited in Busby *et al* 1999) . Short-term trends (1987-1997) in summer steelhead abundance on John Day River tributaries range from 1 to 21% declines per year. The greatest declines in abundance over the past 10 years have occurred on the mainstem of the John Day river (21%) and on the Deschutes River at Sherrars Falls (12%) (Busby *et al* 1999; Table 7).

Results of decline analysis for the MCR steelhead ESU overall points to a median population growth rate (lambda) over the base period ranges from 0.88 to 0.75, declining as hatchery fish

reproduction increases (McClure *et al* 2000, Table B-1). NOAA Fisheries also estimated the percent increase in lambda needed to reduce the risk of a 90% decline in 48 years ranges from zero percent for the Yakima River stock to 12% for the Deschutes River stock, assuming no hatchery fish reproduction. If hatchery fish reproduce at the same rate as wild fish the percent increase required to prevent a 90% decline in 48 years ranges from zero percent for the Yakima River stock to 32% for the Deschutes River stock (McClure *et al* 2000, Table B-9).

2.1.5 Effects of the Proposed Action

The ESA implementing regulations define "effects of the action" as "the direct and indirect effects of an action on the species together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline" (50 CFR 402.02).

The segment of Touchet River flowing through the action area is a corridor for steelhead migration between the Walla Walla River and spawning habitats in the Touchet River headwaters. The proposed project would replace an existing bridge with a design that improves channel dynamics, and localized water quality. The proposed replacement, however, is likely to adversely affect MCR steelhead, as determined by the FHWA. The primary adverse effects of the project are the direct effects of the construction needed to replace the existing bridge.

2.1.5.1 Direct Effects

Direct effects are the immediate effects of the project on the species or its habitat. Direct effects result from the agency action and include the effects of interrelated actions and interdependent actions. Excluded are any future Federal actions that are not a direct effect of the action under consideration (and not included in the environmental baseline or treated as indirect effects) (50 CFR 402.02).

The action area itself does not provide spawning habitat. Affected steelhead would be juveniles migrating through or rearing in the area. Since the Touchet River is a migratory corridor, a few juveniles steelhead are likely to be in the action area during the proposed construction period. Generally, the direct effects involve the duration (1–2 months) of construction activities in or adjacent to the Touchet River. Specific construction techniques and restrictions in timing and duration of construction will minimize the negative effects associated with the proposed project.

2.1.5.1.1 Worksite Isolation and Fish Handling. Isolating the work area and temporarily diverting the creek can strand juvenile steelhead and fish handling can increase plasma levels of cortisol and glucose in fish (Hemre and Krogdahl 1996, Frisch and Anderson 2000). Further, when poorly done, electrofishing can injure or kill juvenile or adult steelhead. Physical injuries from electrofishing include internal hemorrhaging, spinal misalignment, or fractured vertebrae. Also, diverting water through a culvert past the isolated work area could impede movement of steelhead.

To reduce the likelihood of exposing fish to construction activities, the project includes a series of techniques to isolate fish from the worksite. These include restrictions in timing of in-water construction, physically blocknetting the work area to exclude fish, capturing and moving residual fish observed in the blocked work area, and then electrofishing to locate and remove any remaining fish. The in-water work window of June 15 to September 30 is before adult steelhead migration and spawning, and after downstream smolt migration. Therefore, it is likely that the only steelhead life stage to be directly affected by fish handling are juveniles that hatch in the year of construction.

To reduce or avoid the possibility of harm from electrofishing, the project proponent will adhere to NOAA Fisheries electrofishing guidelines (NMFS 2000) and use a qualified biologist to ensure the safe capture, handling, and release of fish. Finally, the bypass culvert will be sized and installed in a manner to ensure safe fish passage in the unlikely event that migrating fish are present during the in-water work period. Although these techniques are intended to reduce the number of fish that will experience construction effects, each of these activities can injure or kill fish. However, use of trained personnel and adherence to NOAA Fisheries protocols (NMFS 2000) will minimize the likelihood of lethal effects to steelhead.

2.1.5.1.2 Water Quality. The project includes construction activities (streambank grading, channel excavation, installation of weirs, placement and removal of dewatering barriers and the temporary bypass culvert, removal of low-head dam, removal of upstream culverts) that could cause short-term increases in turbidity and sediment mobilization during and immediately after construction. Deposition of fine sediment can significantly degrade instream spawning habitat, reduce survival of steelhead from egg to emergence (Phillips *et al.* 1975), reduce intergravel cover (Spence *et al.* 1996), and reduce the productivity of benthic organisms as food for fish. Suspended sediments can cause sublethal effects such as elevated blood sugars and cough rates (Servizi and Martens 1992), physiological stress, and reduced growth rates. Elevated turbidity levels can reduce the ability of salmonids to detect prey, cause gill damage (Sigler *et al.* 1984, Lloyd *et al.* 1987), and cause juvenile steelhead to leave rearing areas (Sigler *et al.* 1984). Additionally, studies indicate that short-term pulses of suspended sediment influence territorial, gill-flaring, and feeding behavior of salmon under laboratory conditions (Berg and Northcote 1985).

The project incorporates measures to reduce, if not avoid, these effects, including restricting timing and duration of construction, temporary erosion and sediment control measures and the use of a mixing zone. Construction methods will ensure that turbidity levels generated by the action do not exceed 5 nephelometric turbidity units (NTU) above background levels beyond 200 feet (for flows between 10 and 100 cfs, as described in Washington Administrative Code (WAC) 201-100 and WAC 201-110 [WDOE 1997]) downstream of the project area.

Mixing zones are geographically and temporally limited authorization (a few hours or a few days) for exceedance of water quality standards to be used during project construction. A mixing zone is allowed only after implementation of appropriate best management practices to avoid or minimize disturbance of sediment. Any deposition from suspended sediments within

the action area will be flushed out, either when flow is reestablished or during the next high flow event (rain or snowmelt). Numerous studies have indicated that benthic invertebrate abundance is reduced by deposited sediment, but drift from upstream rapidly recolonizes the affected area (Barton 1977; Reed 1977; Chisolm and Downs 1978; Waters 1995). The temporary increase in turbidity will not be significantly additive to the environmental baseline over the long term.

2.1.5.1.3 Disturbance of Streambed. Demolition of the existing bridge, placement of dewatering barriers, temporary culverting and backfilling of the stream channel, and removal of debris and backfill from the construction area will disturb the substrate of the Touchet River. Work within the stream channel is likely to mobilize existing sediment and displace benthic fauna in the immediate area (the impacts of increased turbidity and sediment deposition are found at section 2.1.5.1.2, above). Additionally, the use of heavy equipment in the riparian areas and within the streambed can compact soils, resulting in reduced infiltration at the project site. Such compacting decreases the stability of the banks, reduces recruitment of riparian vegetation, which results in increased deposition of fine sediments into the river.

While it is unlikely that the instream work will affect spawning habitat (no spawning habitat has been observed in the action area), instream work may harm fish by mobilizing existing sediment and homogenizing the substrate, thereby, reducing the diversity of benthic habitat in the immediate area. Minshall (1984) has recognized and extensively researched the importance of the trophic relationship between benthos and fish productivity. Minshall observed that benthos abundance is lowest in homogeneous sand or silt or in large boulders and bedrock; abundance is greatest in the mixture of heterogeneous gravel pebble and cobbles.

The biological effect of episodic sediment inputs has been found to be temporary. Adherence to water quality standards as described above is expected to result in rapid recovery in the action area by invertebrate drift from upstream reaches. Based on the timing of the activity, temperature and stream flow, invertebrate recolonization could occur within two weeks after completion of instream activity (Allan 1995; Waters 1995). As a result, the temporary loss of benthic prey for salmonids in the area will likely be insignificant.

To minimize the disturbance of the streambed, the Contractor will stay within the designated work area and access routes. The bridge deck will be cleaned of aggregate or earth materials prior to bridge removal. The FHWA will ensure that bridge demolition is performed in a manner consistent with the above-mentioned criteria for water quality. As much of the bridge as possible will be dismantled or mechanically cut into easily transported sections, and lifted vertically and away from the project area. Bridge parts that cannot be mechanically removed may be broken into large sections and dropped into the stream channel after streamflow has been diverted. These sections will be as large as can safely be handled and will be removed immediately after they have been dropped. The FHWA will remove the footings by mechanical means. No blasting will occur.

Upon completion of the bridge demolition and removal of the footings, FHWA will fill the excavated voids with clean washed gravels and contour the area to match the surrounding natural

streambed elevations to ensure turbidity upon release of flow in the creek channel is minimized and meets the water quality criteria described above. The project includes construction of a small amount of pool habitat by carefully placing clusters of large rock and rootwad structures downstream of the new bridge to add an element of channel roughness that presently does not exist. Mechanical equipment for use in bridge removal and placement of boulders for fish habitat will not be located in-water, and heavy equipment will be limited to that with the least adverse effects on the environment. Therefore, removal of the old bridge footings and abutments, along with placement of rock clusters and gravels, should result in long-term improvements in streambed conditions within the action area.

2.1.5.1.4 Alteration of Streambanks and Riparian Vegetation. The project involves removal or temporary alteration of existing riparian vegetation. Like most of the Lower Walla Walla subbasin, the action area has poor riparian conditions (Kuttel 2001). In most areas of the watershed, woody debris has been removed and riparian vegetation has been removed to the streambank to allow expansion of agricultural activities. Both upstream and downstream of the bridge footprint, cultivated fields are found up to the edge of the channel.

Riparian vegetation links terrestrial and aquatic ecosystems, influences channel processes, contributes organic debris to streams, stabilizes streambanks, and modifies water temperatures (Gregory *et al*. 1991). Removal of vegetation may result in increased water temperatures that would further degrade already impaired water temperatures in the action area. Elevated water temperatures may adversely affect salmonid physiology, growth and development, alter life history patterns, induce disease, and may exacerbate competitive predator-prey interactions (Spence *et al*. 1996). Loss of vegetation also may reduce allochthonous inputs to the stream. Woody debris provides essential functions in streams including the formation of habitats. Additionally, the removal of vegetation decreases streambank stability and resistance to erosion.

To minimize these effects, FHWA will mow existing vegetation in areas of temporary fill to maintain the root structure and promote rapid regeneration. Bank reconstruction will be necessary since the removal of the existing bridge will modify the streambanks. Bank reconstruction will include the creation of four-to-one slopes immediately adjacent to the stream banks, increasing to two- to-one, farther upslope under the bridge. The two-to-one slopes will be covered in riprap and the four-to-one slopes will be covered with a geogrid fabric composed of 100% coir twine (from coconut husks) and planted with native riparian vegetation. Banks in the vicinity of the detour route will be regraded to match the existing banks and willow slips will also be planted in these areas.

Soil and willow fascines placed within the riprap (providing in-kind replacement of riparian function within the first growing season) will minimize short-term adverse affects. FHWA will plant native species, such as golden currant, dwarf rose, red osier dogwood, coyote willow, serviceberry, rabbit brush, and bitter brush, using two gallon potted stock planted three-foot on center, from the from the channel upslope to the top of the terrace. Where vegetation is removed or disturbed, the project incorporates a plan to replant native vegetation and establish processes that create riparian habitat. The revegetation activities will increase the amount of streambank

that is providing riparian shading and allochthonous inputs, and provide a greater total vegetated area compared to existing conditions. The result will be a long-term improvement in riparian structure and function within and adjacent to the action area.

2.1.5.2 Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time and are reasonably certain to occur. Indirect effects may occur outside the action area directly affected by the action. Indirect effects might include other Federal actions that have not undergone section 7 consultation but will result from the action under consultation. These actions must be reasonably certain to occur, or a logical extension of the proposed action (50 CFR 402.02).

Over time, based on the design and features to be included, the project will result in incremental, beneficial affects to water quality, fluvial transport, channel morphology, in-stream habitat, and riparian buffer.

2.1.5.2.1 Impervious Surface and Stormwater Facilities. The project will add 0.21 acre of new road surface and 0.05 acre of new bridge surface in the Touchet watershed. There are several adverse effects associated with adding impervious surface such as roads to a watershed. Runoff processes influence quantity, quality, and timing of surface and subsurface flow. Water routing influences riparian vegetation, nutrient inputs, and stream productivity. Runoff from paved surfaces can contain oil, grease, antifreeze, pesticides and other pollutants harmful or lethal to aquatic organisms. If runoff from impervious surfaces flows directly into natural water systems, negative affects to steelhead include reducing invertebrate diversity and density, degrading water quality, water temperature, and/or altering the hydrology of stream habitat. Incorporating stormwater treatment facilities and other techniques into the project can reduce the adverse effects of those changes.

Under current conditions, the existing bridge drains directly into the Touchet River. The new bridge will route runoff from the bridge surface into catch basins located at the ends of the new bridge. These catch basins will direct water to an open channel swale that will prevent untreated runoff from entering the Touchet River. Water from the new road surfaces will sheet-flow into the roadside swale. The roadside open conveyance system for this project will treat 100% of the estimated stormwater from the entire roadway. Treatment of runoff through infiltration sites will minimize disruption of the hydrology of the system, and remove pollutants and fine sediments currently flowing directly into the river.

2.1.5.2.2 Changes in Fluvial Transport, Channel Morphology and Complexity. The current condition of the lower Touchet River provides little refugia for adults or juveniles. The existing conditions in the area of the bridge constrict the channel, contribute to channelization, restrict floodplain access, and provide little riparian structure or function. The replacement of the existing bridge with a longer, single span structure, complete removal of the in-water abutments and crib wall, reshaping and revegetating the streambanks, and placement of large wood and boulders into the river will improve the transport of sediment and large woody debris, improve

riparian structure and function, and create a small amount of in-stream habitat. Although the new bridge will not specifically cause streambed aggradation or reconnection to the floodplain, it will remove the negative effects of the old piers and crib wall. Overall, the project will result in minor improvements in fluvial transport, channel morphology, and stream habitat complexity in the action area.

2.1.5.3 Interrelated and Interdependent Effects

This project will replace the existing substandard bridge with a new two-lane bridge that meets current safety and load requirements. This is an in-kind replacement that will not affect changes in traffic patterns or traffic volumes. Therefore, NOAA Fisheries does not expect any interrelated or interdependent effects from the project.

2.1.6 Cumulative Effects

Cumulative effects are "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR. 402.02). Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation under section 7 of the ESA.

Efforts have begun to improve conditions for steelhead in the Walla Walla subbasin. The WDFW is involved in upgrading hundreds of irrigation screens and systems that currently block or entrain steelhead. In addition, the county plans to replace two more bridges on the Touchet River within the next 5 years. These projects will replace old bridges (with abutments located in the active creek channel) with newer designs that span the channel. Individually, the short-term and long-term effects of each bridge is likely to be immeasurable. The short-term negative effects will be minimized both temporally and spatially and are unlikely to have any measurable effect on the population. The long-term beneficial effects will be spread out spatially but will result in overall incremental improvement in water quality and channel morphology for the lower watershed.

The work undertaken by the WDFW to upgrade screening systems and FHWA's replacement of bridges will have little beneficial affect if efforts are not continued to remove fish passage barriers, increase instream flows, improve riparian buffers and reduce sediment runoff. In the action area for this project, agricultural activities are the main land use. At the project site, land use activities are not expected to substantially change.

2.1.7 Conclusion

NOAA Fisheries has determined that the proposed action will not jeopardize the continued existence of MCR steelhead. Project construction is confined to the time of year when the least number of fish are likely to be present in the action area, reducing the likelihood of fish exposure to potential harm, as a threshold matter. While the proposed action consists of construction

activities that will affect steelhead and their habitat, it also includes measures that lower the likelihood that any of the project effects will kill or injure individual fish.

Construction activities include isolating the worksite from the stream, and techniques to remove residual fish from the work area. While these measures will temporarily interrupt the functional processes of the stream channel at the worksite, isolating the worksite ensures that no fish will experience the adverse effects of in-channel work. While fish removal techniques can injure or kill individuals, the handling techniques are intended to further reduce the stressful effects of capture and removal.

The new bridge will slightly increase the amount of over-water structure above the Touchet River and the amount of impervious surface in the watershed. Treatment of runoff that presently flows directly into the river, will sufficiently minimize the effect of new impervious surface. Removal of in-water abutments and the crib wall will improve the current degraded condition of the lower Touchet River. As an individual project, the results are likely to be immeasurable, but as a component of several bridge replacement projects in the watershed, all of which are designed to improve treatment of runoff and reduce channel constriction, the long-term effect will be beneficial to the population.

Finally, the new structure is designed to alleviate the detrimental effects of the existing structure, and enable improved function of certain habitat creating processes, at and near the construction site. Replacement with a longer bridge will improve channel morphology and passage conditions for all life stages of salmonids, and placement of boulders and log structures into the stream channel will create pool habitat providing cover and resting areas for all aquatic species.

The conclusion of "No Jeopardy" is based on the factors listed above. NOAA Fisheries concludes that the proposed action is not likely to impair properly functioning habitat or appreciably reduce the functioning of already impaired habitat. Furthermore, NOAA Fisheries concludes that the proposed action is unlikely to adversely influence existing population trends or risks in the action area. Therefore, the proposed action is not likely to appreciably reduce MCR steelhead numbers, reproduction, or distribution.

2.1.8 Reinitiation of Consultation

NOAA Fisheries conducted the foregoing analysis and reached the foregoing conclusion based on the description of the proposed action, including measures to reduce and avoid effects on MCR steelhead. This analysis also informs the assessment of the amount or extent of take presented below. Should the project not be conducted as described, or should any of the below-stated criteria be triggered, the action agency will be responsible for reinitiating consultation .

Consultation must be reinitiated if the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species

is listed or critical habitat is designated that may be affected by the action (50 CFR. 402.16).

2.2 Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined as significant habitat modification or degradation that results in death or injury to listed species by "significantly impairing behavioral patterns such as breeding, spawning, rearing, migrating, feeding, and sheltering" (50 CFR. 222.102). Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking, provided that such takings is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. The take statement also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

The measures described below are largely restated from the description of the proposed action . They are restated here in the incidental take statement to ensure that the action agency is aware that they are non-discretionary. For the exemption in section 7(o)(2) to apply, they must be implemented by the action agency so that they become binding conditions of any grant or permit issued to the applicant as appropriate. The action agency has a continuing duty to regulate the activity covered in this incidental take statement. If the action agency fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

2.2.1 Amount or Extent of Take Anticipated

As stated in section 2.1 above, MCR steelhead use the Action Area for juvenile rearing and migratory purposes, and thus will experience the effects of the action in their environment. While some effects on this ESU can be minimized and even avoided by timing construction activities for periods of low presence because MCR steelhead can be present in the Touchet River throughout the year, incidental take of these listed fish is reasonably certain to occur.

Take is likely to be in the form of "harm" (habitat modification; see 50 CFR 222.102), which will occur during construction, and in the form of injury or mortality from the activities used to move fish during worksite isolation. Because fish presence over time in any given local is highly variable, for habitat affecting activities, NOAA Fisheries cannot estimate a specific amount of incidental take of individual MCR steelhead, despite the use of the best scientific and commercial data available. As a surrogate for estimating the number of fish harmed by the

proposed action, NOAA Fisheries has estimated the extent of habitat affected by those activities. The estimated extent of habitat affected from construction activities (*e.g.*, sediment mobilization, stream dewatering, and short-term loss of riparian habitat) are the thresholds for reinitiating consultation.

For water quality effects, take is anticipated from turbidity increases within 200 feet downstream of the project area when flows are above 10 cfs and less than 100 cfs, or 300 feet if flows exceed 100 cfs (WDOE 1997). For riparian and streambank disturbance, the extent of anticipated take is that which could result from up to 300 linear feet of disturbance, stabilization and revegetation. For temporary river diversion, the extent of take anticipated is that which could occur from the temporary diversion of up 150 feet of the Touchet River.

Injury or mortality from worksite isolation techniques, however, can be estimated in terms of numbers of fish affected. For take from electrofishing techniques, the extent of lethal take anticipated is two fish (NMFS 2002a, 2002b). An estimate of the number of listed fish expected to be encountered during worksite isolation was obtained using the results of similar fish removal activities in the Lower Walla Walla River subbasin (Dry Creek and the Walla Walla River) in August 2002 (NMFS 2002a, 2002b).

Table 1. Estimate of nonlethal and lethal take associated with proposed project requiring isolation of an in-water work area and electrofishing to collect and remove fish.

Species	Life stage	Estimated Total catch	Nonlethal Take of ESA listed fish	Lethal Take of ESA listed fish
MCR steelhead	juvenile	20	18	2

NOAA Fisheries will update this estimate of incidental take before March 31 each year after reviewing information from the preceding year describing isolation of in-water work area operations. Because of the timing of the in-water work period, capture and release of adult fish is not expected to occur as part of the proposed isolation of in-water work areas. Thus, NOAA Fisheries does not anticipate that any adult fish will be taken. Should any one of the above described limits be exceeded, construction must stop and the action agency must reinitiate consultation.

2.2.2 Reasonable and Prudent Measures

The measures described below are nondiscretionary. They must be implemented, as they are binding conditions for the take exemption in section 7(a)(2) to apply. The FHWA has the continuing duty to regulate the activities covered in this incidental take statement. If the FHWA fails to adhere to the terms and conditions of the incidental take statement through enforceable terms added to the document allowing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) will lapse.
NOAA Fisheries believes the following reasonable and prudent measures (RPMs), along with

conservation measures described in the BA, are necessary and appropriate to minimize the incidental take of MCR steelhead resulting from the proposed action:

1. FHWA will minimize take incidental to isolation and fish handling activities;

2. FHWA will minimize take incidental to in-water construction activities;

3. FHWA will minimize take from effects on riparian and instream habitat.

2.2.3 Terms and Conditions

To comply with ESA section 7 and be exempt from the prohibitions of section 9 of the ESA, the FHWA must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. To implement all RPMs, FHWA will reduce the probability of encountering listed fish by ensuring that in-water construction is conducted only within the approved fish work window of July 15 to September 30. Any extensions of the in-water work period must be coordinated with NOAA Fisheries and WDFW.

2. To implement RPM No. 1, the FHWA will ensure that the work area is isolated from the flowing stream using the measures described in the BA and as outlined below.

    a. Install block nets at upstream and downstream locations to isolate the entire affected stream reach and prevent fish and other aquatic wildlife from moving into the work area. Block net mesh size, length, material, and depth will vary based on site conditions. Block net mesh size is the same as seine material (approximately one-quarter inch stretched). FHWA will ensure that block nets are installed securely along both banks and in the channel to prevent failure during unforeseen rain events or debris build-up. Some locations may need added block net support such as galvanized hardware cloth, extra stakes, or metal fenceposts. Block nets will remain in place throughout the activity and debris removed to ensure proper function. Following initial environmental staff oversight, a staff person will check and maintain the nets. Crew supervisors, leads, or crew members may check these nets. The flow rate in the stream and the amount of debris collected on the net will determine how often to check and clean the nets.

    b. Fish removal procedures will minimize handling and stress to the maximum extent possible. Dip, seine or fyke net exclusion procedures are as follows: After isolating the stream reach, remove all observable fish and other aquatic life with the least amount of handling (Appendix 1). Immediately place any aquatic life captured by hand or with nets, into dark colored five-gallon buckets filled with clean stream water. Biologists may also seine or pull nets through the isolated

stream reach. The lengths of one-quarter inch stretched nylon mesh minnow netting will depend on the site specifications. Seining follows adapted protocol of Parametrix (1980) and Muckleshoot Fisheries Department (Warner and Fritz 1995). A summary of this protocol follows:

c. The seine is approximately three feet wide and of varying lengths with approximately 15 feet of rope attached to either end. One person remains on shore and one to two people work the other end of the net through the isolated stream reach area. Once the net is out and the lead line dropped to the bottom, bring the other end of the 15-foot line to shore and pull both ends in quickly in tandem. To exclude fish from the area, fyke nets or minnow traps are effective. Use of the traps depends on reach characteristics mentioned earlier.

d. FHWA may electrofish after all other techniques have failed to remove all observable fish. Permit requirements and site conditions will determine electrofishing criteria. Electrofishing is not recommended in all situations. Any electrofishing will use the guidelines specified in *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act* (NMFS 2000) (http:www.nwr.noaa.gov/1salmon/salmesa/4docs/final4d/electro2000.pdf).

e. Handling of captured fish will be minimized and an appropriate environment for the stressed fish will be available. FHWA will minimize crowding and holding time. Keep large fish separated from smaller fish to avoid predation during containment. Consideration of the need for supplemental oxygen, water to water transfers, and the use of shaded or dark containers when designing fish handling operations.

f. Drag netting or seining through the isolated stream reach is the preferred technique. Only if netting or seining fail to remove all observable fish are hand or dip nets or electrofishing allowed. After removing fish from the isolated reach, flow will pass through a temporary culvert using cofferdams (*e.g.*, sandbags filled with pea gravel, ecology blocks) above and below the culvert. A screened intake pipe will pump standing water out of the construction area after fish removal, coffer damming, and bypass. Water intakes used for the project that remove water from the main channel, including pumps used to isolate an in-water work area, will have a fish screen installed, operated, and maintained according to NOAA Fisheries fish screen criteria (NMFS 2003).

g. Any accidental injury or killing of listed species will be reported to FHWA, WDFW and NOAA Fisheries within two working days of occurrence (Appendix 1). Although fish removal is not expected to kill more than two juvenile steelhead, all salmonid mortalities will be documented and reported to NOAA Fisheries. Initial notification of fish mortality may be verbal, followed by a written in-water construction monitoring report (Appendix 1).

f. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during capture and transfer procedures to prevent the added stress of out-of-water handling.

h. Captured fish must be released outside of the isolated work area, as near as possible to the capture area.

i. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the capture team's capture and release records and facilities.

j. All take of listed salmonids during work area isolation must be documented and reported using the format attached in Appendix 1. FHWA will ensure that NOAA Fisheries receive the monitoring reports of take within one month beginning when the initial work area isolation activities commence until in-water construction activities cease. The reports will be sent to NOAA Fisheries, Attention: Diane Driscoll, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503.

2. To implement RPM No. 2, the FHWA will minimize effects from in-water work by ensuring that:

a. Construction methods do not cause turbidity to extend beyond 200 feet downstream of the project area for flows greater than 10 cfs and up to 100 cfs, or 300 feet for flows greater than 100 cfs at time of construction (the expected flow is less than 100 cfs as described in WAC-201-100 and WAC-201-110) (WDOE 1997).

b. All water intakes used for the project that remove water from within the active channel, including pumps used to dewater work areas, supply water for construction or riparian plantings will have fish screens installed, operated, and maintained according to NOAA Fisheries' fish screen criteria. Water pumped from areas outside the channel, that have no probability of containing fish, are not required to be screened.(NMFS 2003 http://www.nwr.noaa.gov/1hydrop/hydroweb/docs/release_draft.pdf).

c. All equipment used for in-water work will be cleaned prior to entering the active channel of the Touchet River and will be "diapered" or otherwise protected to prevent introducing hazardous material within the OHWM . External oil and grease will be removed. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

d. Stationary power equipment operated within 150 feet of any stream or wetland

will be "diapered" or otherwise protected to prevent leaks.

e. Material removed during excavation will only be placed in a manner that prevents it from eroding back into the channel.

f. Measures will be taken to prevent construction debris from falling into the stream or riparian area. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

3. To implement RPM No. 3, the FHWA will minimize effects from construction activities adjacent to the stream by ensuring that:

a. All temporary erosion and sediment control (TESC) and pollution control measures included in the BA are included as provisions in the contract. During pre-construction meetings, the Contractor will be made aware of the types of activities not allowed in sensitive areas. The Contractor will be required to have a Spill Prevention Control and Containment Plan (SPCC) and a TESC Plan reviewed by the WDFW and FHWA and in place prior to the start of any construction activities. The TESC plan will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. The TESC plan will be included in the project plans and implemented by the Contractor. The plan will address access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and materials storage sites, fueling operations, staging areas, cement, mortars and bonding agents, hazardous materials, spill containment and notification, construction debris, and inspection and replacement of erosion controls. Erosion control measures will be sufficient to ensure that water quality conditions do not negatively impact MCR steelhead.

b. The Contractor develops an adequate, site-specific SPCC and Pollution Control Plan (PCP) and is responsible for the containment and removal of any toxicants released.

c. Construction within the project vicinity will not begin until all temporary erosion controls (*e.g.*, sediment barriers and containment curtains) are in place. Erosion control structures will be maintained throughout the life of the contract, and will be monitored for effectiveness.

d. All sensitive habitat areas to be protected will be clearly marked. Boundaries of clearing limits associated with site access and construction will be marked to minimize disturbance of riparian vegetation and other sensitive sites.

e. A supply of emergency erosion control materials will be on hand, and temporary erosion controls will be installed and maintained in place until site restoration is complete.

f. Heavy equipment will be limited to that with the least adverse effects on the environment, (*e.g.*, minimally sized vehicles to reduce compaction rates).

g. Areas for fuel storage, refueling, and servicing of construction equipment and vehicles will be at least 50 feet from the stream channel and all machinery fueling and maintenance will occur within a contained area. Fueling large cranes, or drill rigs may occur within 50 feet with full containment systems in place and notification of the project engineer, WSDOT environmental staff, and NOAA Fisheries. Overnight storage of vehicles and equipment must also occur in designated staging areas.

h. All temporary roads will be obliterated and restored when the project is completed. Areas compacted during construction will be restored to pre-project infiltration capabilities.

4. To implement RPM No. 3, the FHWA will ensure riparian and in-stream habitat protection by:

a. Minimizing alteration of native vegetation. Where native vegetation is altered, measures will be taken to ensure that roots are left intact. This will reduce erosion while still allowing room to work. No protection is extended to invasive species (*e.g.*, Himalayan blackberry) although no chemical treatment of invasive species will be used.

b. Replacing riparian vegetation that is removed with native species mix of seeds, shrubs and trees. Trees and willow cuttings will be planted along the toe of the slope.

c. Minimizing alteration or disturbance of streambanks and existing riparian vegetation by implementing the following procedure: riparian vegetation moved or altered during construction will stay on site or be replaced with a functional equivalent; all tree removal will be mitigated for onsite by a two to one ratio; and any native channel material, topsoil, and vegetation removed will be stockpiled for redistribution in the project area.

d. Making no surface application of nitrogen fertilizer within 50 feet of any water of the state in the action area.

e. Using riprap for protection of bridge abutments that is clean, the minimum possible size, and "placing" not dumping riprap. Bank stabilization design will

follow the Integrated Streambank Protection Guidelines (ISPG) as much as possible (WDFW and Inter-Fluve 2002).

f. Backfilling areas of riprap (bridge abutments) with soil and planted with species capable of rapid regeneration as described the BA planting plan (*e.g.*, willow fascines).

g. Vehicles and machinery must cross riparian areas and streams at right angles whenever possible.

5. To implement RPM No. 3, the FHWA, will ensure riparian conditions are favorable to fish by submitting to NOAA Fisheries (Washington Branch) a monitoring report with the results of the monitoring described below. Send report to NOAA Fisheries, Attention: Diane Driscoll, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503.

   a. All riparian plantings will be monitored yearly for three years to ensure that finished grade slopes are at stable angles of repose and that woody plantings are achieving a minimum of 80% cumulative survival.

   b. If the success standard specified above in RPM 5(a) is not achieved, dead plantings will be replaced to bring the site into conformance. If failed plantings are deemed unlikely to succeed, replacement plantings will be conducted at other appropriate locations in the project area.

3.0 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The MSA established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2));

- NOAA Fisheries must provide conservation recommendations for any Federal or state activity that may adversely affect EFH (§305(b)(4)(A));

- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. For a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency must explain its reasons for not

following the recommendations (§305(b)(4)(B)).

Essential Fish Habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.110). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

Essential Fish Habitat consultation with NOAA Fisheries is required for any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA, the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook; coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Actions

The proposed action and action area are detailed above in sections 1.2 and 1.3 of this document. The action area includes habitats that have been designated as EFH for various life-history stages of chinook.

3.4 Effects of Proposed Actions

As described in detail in section 2.1.5 of this document, the proposed action may result in detrimental short- and long-term impacts to a variety of habitat parameters. These adverse effects are:

1. Short-term degradation of benthic foraging habitat because of the temporary diversion of approximately 120 linear feet of the stream channel and the temporary culverting of Touchet River.

2. Short-term degradation of water quality in the action area because of an increase in turbidity during in-water construction and the potential for contaminants to reach the stream.

3. Short-term degradation of habitat because of temporary loss of approximately 300 linear feet of streambank vegetation.

3.5 Conclusion

NOAA Fisheries believes that the proposed actions may adversely affect EFH for chinook salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to Federal agencies regarding actions that would adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the Walla Walla County, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. Consequently, NOAA Fisheries recommends that the Walla Walla County implement the following conservation measures to minimize the potential adverse effects to EFH for chinook salmon:

1. To minimize EFH adverse effect No. 1 (degradation of benthic foraging habitat), all work within the active channel will be completed between July 15 and September 30. On or before September 30, the temporary culvert and fill will be removed and flow will be restored to the natural channel.

2. To minimize EFH adverse effect No. 2 (water quality), FHWA will ensure that:

    2.1 All temporary sediment control (TESC) and pollution control measures included in the BA are included as provisions in the contract. The Contractor will be required to have a Spill Prevention Control and Containment Plan (SPCC) and a TESC Plan reviewed by the WDFW and FHWA and in place prior to the start of any construction activities.

2.2 Turbidity plumes will not extend greater than 200 feet downstream of the project area (for flows above 10 cfs and less than 100 cfs). If flows exceed 100 cfs, turbidity cannot extend beyond 300 feet downstream of the project area as described in WAC-201-100 and WAC-201-110 (WDOE 1997).

3. To minimize EFH adverse effect No. 3 (temporary loss of riparian habitat), FHWA will:

3.1 Ensure that streambank alteration does not extend beyond a total of 300 linear feet.

3.2 Minimize alteration of native vegetation and where possible, mow to keep root systems intact, increasing bank stability and speed of regeneration.

3.3 Replant disturbed areas with a mix of native seeds, shrubs and trees.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(k), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(l)).

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APPENDIX 1

In-Water Construction Monitoring Report
Johnson Bridge Replacement (2002/01227)

Start Date: _____
End Date: _____

Waterway: Touchet River, Walla Walla County

Construction Activities:

_____
_____
_____
_____
_____

Number of fish observed: _____
Number of salmonid juveniles observed (what kind?): _____
Number of salmonid adults observed (what kind?):
_____

What were fish observed doing prior to construction?_____
_____
_____

What did the fish do during and after construction? _____
_____
_____
_____

Number of fish stranded as a result of this activity: _____

How long were the fish stranded before they were captured and released to flowing water?
_____
_____
_____

Number of fish that were killed during this activity: _____

Send report to:
National Marine Fisheries Service, Attention Diane Driscoll, Washington State Habitat Branch, 510 Desmond Dr. SE, Suite 103, Lacey, WA 98503